

More Dilution Calculations

Name - _____

$$\text{Molarity} = \frac{\text{moles of solute}}{\text{litre of solution}}$$

$$[\text{final}] = \frac{[\text{initial}] \times (\text{initial volume})}{(\text{final volume})}$$

1.) How many litres of a 0.250 M K_2CrO_4 solution contain 26.3 grams of K_2CrO_4 ?

2.) How many grams of sodium sulphate are there in 0.27 L of a 1.13 M solution?

3.) 1.00 L of solution contains 0.200 moles of $\text{NaF}_{(s)}$ and 0.300 moles of $\text{MgF}_{2(s)}$. Find;

$$[\text{Mg}^{2+}] = \underline{\hspace{2cm}}$$

$$[\text{Na}^+] = \underline{\hspace{2cm}}$$

$$[\text{F}^-] = \underline{\hspace{2cm}}$$

4.) What would be the molarity of a solution in which 50.0 litres of $\text{HCl}_{(aq)}$ measured at STP, is dissolved in 2.00 L of water? (assume no change in volume of the water when the gas is added).

5.) To what volume must 100. mL of 6.00 M $\text{HCl}_{(aq)}$ be diluted in order that the resulting solution be 1.00 M?

6.) How many molecules of sucrose, $\text{C}_{12}\text{H}_{22}\text{O}_{11}$, would there be in 1.00 mL of a 1.00 M solution?

7.) How many grams of $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}_{(s)}$ would be required to prepare 1.00 L of 2.00 M CuSO_4 ?

8.) 2.00 L of 12.0 M $\text{HCl}_{(aq)}$ is diluted to 20.0 L. What is the molarity of the diluted solution?